REMARKS

Claims 1, 3-4, 6-7, 9-10, 13-16, 18-24, and 26-27 are pending in the subject application. In the present Office Action, all pending claims stand rejected. In particular, claims 9-10, 12, 18-20, and 26 stand rejected under 35 U.S.C. 112, first paragraph for asserted lack of enablement. Claims 1, 3, 6-7, 13-16, 21, 23-24, and 27 stand rejected under 35 U.S.C. § 102(b) as assertedly being anticipated by U.S. Patent No. 5,358,729 to Ohkuma et al. ("Ohkuma"). Claims 4 and 22 stand rejected under 35 U.S.C. § 103(a) as assertedly being unpatentable over Ohkuma. Applicant respectfully traverses the rejections of record as set forth herein.

In the present response, Applicant has amended claims 1, 9-10, 18-20, 24, 26, and 27 to remove issues for appeal and put the claims in position for allowance. Claim 12 has been canceled. Claims 1, 24, 26 and 27 have been amended to replace either "between about 60 and about 100" or "between about 65 and about 100" with "at least 65." Claims 18-20 have been amended to delete "and said whiteness level is between about 65 and about 100." Claims 1, 9-10, 18-20, 24, and 27 have been amended to delete the term "about" with respect to temperature ranges. Support for these amendments may be found throughout the specification as published particularly in the Example section. It is submitted that no new matter has been introduced by the amendments to the claims as indicated in the following remarks concerning the rejection under 35 U.S.C. § 112, first paragraph.

Rejection under 35 U.S.C. § 112, First Paragraph

Claims 9-10, 12, 18-20, and 26 stand rejected under 35 U.S.C. § 112, first paragraph, as lacking enablement. The Examiner states that the specification does not provide enablement for making resistant starch with the claimed whiteness levels using the conditions claimed. Applicant traverses this rejection for the reasons set forth herein.

Applicant respectfully asserts that the claimed subject matter is fully enabled by the specification as originally filed. According to the MPEP, "[a]s long as the specification discloses at least one method of making and using the claimed invention

that bears a reasonable correlation to the entire scope of the claim, then the enablement requirement of 35 U.S.C. § 112 is satisfied." MPEP 2164.01(b) citing *In re Fisher*, 427 F.2d 833, 839, 116 USPQ 18, 24 (CCPA 1970) (emphasis added). As the Examiner notes, the specification discloses three working examples where resistant starch having the whiteness levels of at least 65 is produced using the method claimed in the subject application. (December 5, 2006 Office Action, page 4, first paragraph). The specification also notes "while the examples use a whiteness level target of about 65 for the pyrodextrin, the invention is not limited to this value." (Specification, paragraph [0040]). Those having ordinary skill in the art will recognize that the specification teaches a method wherein the selected pH is optimum to convert the unmodified starch to resistant starch having the claimed whiteness levels when at the reaction temperature. Further, one having ordinary skill would recognize that higher whiteness levels may be obtained using the claimed method and that whiteness levels of at least 65 were used for illustration purposes only.

Further, one skilled in the art would not have to carry out undue experimentation to practice the invention. As discussed above, Applicant has provided three working examples of practicing the claimed invention to produce starch having a whiteness level of at least 65 using the recited conditions. In addition, Figure 1 clearly demonstrates that there is an optimum correlation between temperature and pH at which yield is maximized for a chosen whiteness level. "The fact that experimentation may be complex does not necessarily make it undue, if the art typically engages in such experimentation." MPEP 2164.01. When considering whether undue experimentation was necessary to practice an invention, the Court in *In re Wands* held a specification as enabling when "there was considerable direction and guidance in the specification; there was a high level of skill in the art at the time the application was filed; and all of the methods needed to practice the invention were well known." MPEP 2164.01(a) citing *In re Wands* 858 F.2d 731, 740, 8 USPQ2d 1400, 1406 (Fed. Cir. 1988) (internal quotations omitted). In the present application, the specification provides considerable direction for practicing the claimed invention (including three working examples), the level of skill of one in the art is high (as the Examiner notes, the level of skill would be of one having experience in organic synthesis (December 5, 2006 Office Action, page 3)),

and the chemical procedures needed to practice the invention are well known. Therefore, given the disclosure in the specification, one having ordinary skill in organic synthesis would not have to perform undue experimentation to practice the invention.

Finally, the Examiner states that based on the disclosure of the Ohkuma reference, the same level of whiteness cannot be obtained by heating the acidified starch to three different temperatures. (December 5, 2006 Office Action, page 4). Applicant respectfully disagrees with this statement and draws the Examiner's attention to Figure 1 and Examples 1-3 of the subject application where the same levels of whiteness (i.e., at least 65) was obtained by heating acidified starch to temperatures of 140°C, 150°C and 170°C. The fact that Ohkuma does not disclose the invention and, in fact, teaches away from using these temperatures, only serves to demonstrate that the claimed method is novel and non-obvious over the Ohkuma reference. Further, while the Examiner cites Ohkuma to demonstrate non-predictability in the art, Applicant notes that "even in unpredictable arts, a disclosure of every operable species is not required." MPEP 2164.03. Applicant asserts that the specification, including three working examples demonstrating the claimed invention, fully enables one having ordinary skill in the art to practice the invention. Withdrawal of the rejection under 35 U.S.C. § 112, first paragraph is respectfully requested.

Rejection under 35 U.S.C. § 102(b)

Claims 1, 3, 6-7, 13-16, 21, 23-24, and 27 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Ohkuma. Applicant traverses this rejection at least for the following reason.

Claim 1 of the subject application sets forth a method of producing resistant starch comprising: selecting a reaction temperature of 140°C to 180°C; acidifying unmodified starch to a selected pH of about 1 to about 4 with hydrochloric acid, wherein said selected pH is optimum to convert said unmodified starch to resistant starch when at said reaction temperature; heating said acidified unmodified starch to said reaction temperature; and maintaining said acidified unmodified starch close to said reaction temperature until a maximized yield of resistant starch has been obtained while maintaining a whiteness level of at least 65.

As the Examiner notes, Ohkuma teaches a treatment of corn starch at temperatures of 130°C to 170°C (column 14, lines 30-52). However, as the Examiner also highlights, the maximum whiteness level of the product obtained by Ohkuma within the temperature range set forth in claim 1 of the subject application (i.e., 140°C to 180°C) is only 50.5. (See, Ohkuma, column 23, Table 13). Ohkuma does not disclose heating the acidified unmodified starch to the reaction temperature of 140°C to 180°C and maintaining the acidified unmodified starch close to said reaction temperature until a maximized yield of resistant starch has been obtained while maintaining a whiteness level of at least 65. At these temperature ranges, the Ohkuma process produces whiteness levels of 50.5 or less. Moreover, it is expressly clear from Ohkuma that higher temperatures result in lower whiteness, thus teaching away from the present invention. Therefore, Ohkuma does not teach or suggest every element of the claims of the subject application.

Further, the previously presented claims recited a temperature range of about 140°C to about 180°C. The Examiner states that the recitation of "about" does not clearly define the limits and that 130°C, is seen to anticipate the present claims because 130°C is "about 140°C". Applicant respectfully disagrees. Temperature is a critical parameter that has a major effect on the speed of the reaction and a 10°C difference in temperature will have a major effect on the dextrinization reaction. For example, the Ohkuma reference teaches an inverse relationship between temperature and whiteness and Ohkuma demonstrates that resistant starch prepared at a temperature of 130°C had a whiteness value of 66, whereas resistant starch prepared at a temperature of 140°C had a whiteness value of 50.5 (Table 13). Thus, 130°C is not "about 140°C" and one of ordinary skill in the art would not use the teachings of Ohkuma to make the determination that 130°C is "about 140°C," considering that Ohkuma demonstrates the major effect that these specific temperatures have on the level of whiteness. However, Applicant has removed the term "about" with respect to temperature ranges to (1) remove issues from appeal and (2) put the claims in position for allowance. This amendment is not related to patentability and does not change the scope of the original claims because the term "about" is commonly understood by one of ordinary skill to be a value within the ordinary limits of accuracy of instruments used

to determine the value as typically applied in the relevant art. In view of these amendments and remarks, Applicant respectfully requests that the rejection of claims 1, 3, 6-7, 13-16, 21, 23-24, and 27 under 35 U.S.C. § 102(b) be withdrawn.

Rejection under 35 U.S.C. § 103(a)

Claims 4 and 22 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Ohkuma. Applicant traverses the rejection as set forth herein.

Claim 4 and claim 22 depend from claim 1 of the subject application. As discussed above, Ohkuma does not teach or suggest heating the acidified unmodified starch to a reaction temperature of 140°C to 180°C and maintaining the acidified unmodified starch close to said reaction temperature until a maximized yield of resistant starch has been obtained while maintaining a whiteness level of at least 65 as recited by claim 1. Ohkuma clearly teaches a maximum whiteness level of 50.5 within the reaction temperature range of 140°C to 180°C. Therefore, Ohkuma does not teach or suggest each and every element of claim 4 or 22.

Indeed, Ohkuma teaches away from a whiteness level of at least 65 at these reaction temperatures. Ohkuma discloses a whiteness level of 50.5 at a temperature of 140°C and states that there is an inverse relationship between temperature and whiteness level (i.e., higher temperature results in lower whiteness levels). Thus, Ohkuma teaches that reaction temperatures higher than 140°C would result in starch having a whiteness of less than 50.5. Given this teaching by Ohkuma, it would not be obvious to one having ordinary skill in the art that the claimed whiteness levels could be achieved at the claimed reaction temperatures. In fact, from the express teaching in Ohkuma one of ordinary skill in the art would be lead to do the opposite, i.e., to use a temperature lower than 140°C if one wanted to obtain a whiteness of a least 65. Therefore, claims 4 and 22 are not obvious in view of Ohkuma and Applicant respectfully requests that the rejection of claims 4 and 22 under 35 U.S.C. § 103(a) be withdrawn.

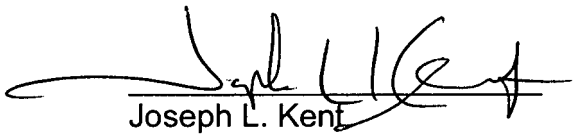
CONCLUSION

Applicant submits that claims 1, 3-4, 6-7, 9-10, 13-16, 18-24, and 26-27 of the subject application recite novel and non-obvious methods for producing a resistant starch. In view of the remarks presented above, Applicant respectfully submits that the subject application is in condition for allowance. Accordingly, reconsideration of the rejections and allowance of all pending claims is earnestly solicited.

Entry of the present temperature is requested regardless whether the Examiner agrees that the claims are in condition for allowance, because the present amendment removes issues and puts the claims in better position for appeal.

If the undersigned can be of assistance to the Examiner in addressing issues to advance the application to allowance, please contact the undersigned at the number set forth below.

Respectfully submitted,



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